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X Rays China Colors.

Joh. Schumacher's
NEW METHOD AND TECHNIQUE
FOR
China painting.

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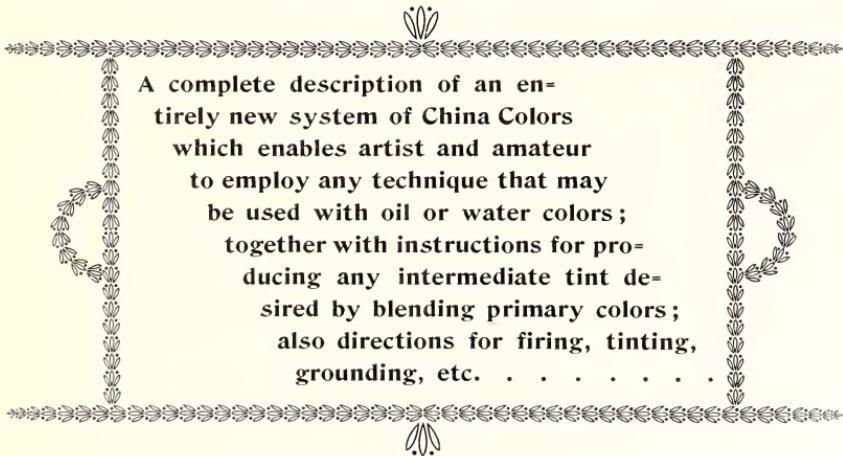


Johannes Schumacher's NEW METHOD AND TECHNIQUE

FOR

China Painting.

A complete description of an entirely new system of China Colors which enables artist and amateur to employ any technique that may be used with oil or water colors; together with instructions for producing any intermediate tint desired by blending primary colors; also directions for firing, tinting, grounding, etc.



X Rays China Colors.

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Introduction.



To the skilled artist everything contained in the following pages is open to simple proof; all that he has to do, is to buy a set of X Rays Colors and a plaque, and proceed to demonstrate for himself the truth or falsity of the claim set up by Mr. Schumacher, to-wit:

THAT HE HAS PRODUCED A SYSTEM OF PORCELAIN COLORS WHICH CAN BE TREATED AS OIL AND WATER COLORS ARE HANDLED.

Thus at one bound porcelain painting rises, through X Rays Colors, from being the hand-maiden to painting, to full sisterhood.

For the amateur it is only necessary to take the primary X Rays Colors and mix them as directed, and he too will find that his release from the distracting number of tints in separate tubes has come. He will learn to make his own tints, develop his own color sense, and under competent guidance grow into an artist.

Need anything more be said than this, that by the methods herein described the genius of a Lehnbach or a Bougereau, instead of being exercised on a canvas which fades through the centuries, may be displayed as imperishably as the marble of Praxiteles?

What this means the future will show.

X* Rays * Colors.



Mineral Colors } AND GRAVE MISTAKES
MADE IN THEIR USE.

We are desirous of advancing china painting to real high art, and have succeeded in producing a color material that is manageable and yielding, that allows of bold artistic application, and that can be handled in the free characteristic style of the artist.

These colors can produce any brilliancy, depth or variation of color existing in nature. Hence there is nothing to prevent china painting being high art.

Hitherto china painting rested entirely upon the dexterity of the hand in overcoming a difficult technique. But this dexterity was dependent upon rules wholly inconsistent with art. Under such restrictions it is impossible to reproduce nature. The difficult application of the old china colors caused a want of blending power, and this made us dependent on the manufacturer for a variation of shades of different colors.

Consequently all directions for china painting were more or less of a mechanical nature, applicable only to china painting.

X RAYS COLORS.—CONTINUED.

With X Rays colors can be exhibited an original technique as with oil or water colors, and our coloring will evidence the cultivation of our color sense. The skill and taste of the artist using X Rays colors is restricted only by such laws as drawing and artistic culture prescribe. The allowances made to the material are not at the expense of art.

In what follows concerning our method of teaching, we are desirous to give in the smallest possible compass reliable and practicable information, which shall form a foundation from which individual talent, taste, sense of color, etc. may develop indefinitely and independently. China painting is by reason of its decorative qualities and its looking pretty, without requiring an art education by the amateur, an especial field for him. With X Rays colors there are no technical difficulties to overcome, and the amateur will find his work interesting and successful.

Mineral Paints.

In order to fully explain to the user of china colors the cause and nature of his difficulties in hitherto securing certain and reliable effects, a brief explanation of the process of making the colors is given as follows: There are three kinds of china on the market, English, French and German, all differing from each other in many important respects. The English is the softest, the German the hardest, French occupying the middle ground. Now the glaze and flux of each kind is not only different from the others, but the German

X RAYS COLORS.—CONTINUED.

and French require more heat than the English. There have been three makes of china colors on the market, German, French and English, which are based to go with the respective china. German colors with German, etc.

The china painter was usually in some such situation as the following: His plaque or other object to be decorated was, say of German make. His colors were a mixed lot of German, French and English paints. As the glaze and flux of the plaque was identical in its firing requirements with only a part of his colors, the reason for indifferent and unlooked for color effects must be plain.

MR. SCHUMACHER makes his own base, and it fluxes perfectly with all three kinds of porcelain. All his colors have the same base, and hence only ten colors are necessary to the artist, as he makes his own tints and shades by blending the primary and secondary colors, proceeding just exactly like the painter on canvas or with water colors.

China colors are made from different materials, decomposed and prepared to fuse with the glaze of china when fixed together. The innovation in X Rays colors is in this, that they are made from a common base to mix with one another, and that they flow freely from the brush, permitting the hand to have entire control.

Heretofore china painting was a laborious undertaking so far as laying on the color went, and demanded a great deal of patience and practice to over-

X RAYS COLORS.—CONTINUED.

come the difficulty of getting the color laid on equally and not blurring or spotting the whole design. Infinite labor was spent on a subject to produce something like the idea in the mind, as one was obliged to square the idea with the means of its execution, and the hand had to master the material.

X Rays colors yield immediately to the painter's hand, and amateurs using them will not be disgusted with the overwhelming difficulties presented by ordinary china colors. X Rays colors are recommended in ten (10) colors only.

Mr. Schumacher does away with the need for the one hundred and fifty different colors advertised by well-known firms. How is it possible for an artist to paint and keep in mind such a distracting variety of colors? He can never be their real master, and good results must largely be a matter of chance. X Rays paints are enriched from their own bases or elements, and not by admixtures of one ready powder with another.

Colors to be reliable for art work must be homogeneous. A mixed or composite color, however bright it may appear, is very unreliable for painting a picture, though it may answer for simple decorative purposes. (For the latter, the decorative uses, X Rays paints are prepared dry in powders or ready mixed with oil, in different tints, to meet the requirements of dusting or tinting or what pertains to decorating.)

Of what advantage are mixtures of bright or rich tints if you do not understand their composition, and

X RAYS COLORS.—CONTINUED.

hence can know little of their possibilities, and even that little with feeble certainty. Each color in our palette should be pure and rich from its base, so we know yellow to be yellow, and green to be green. For example, a ready mixed color, say moss-green, is dead. To produce moss-green as the artist achieves it on his canvas, one color is first laid on, a green, upon which an ochre is laid, and thus he continues according to his skill and taste until the desired moss-green effect appears.

There are no tints in nature, only primary colors. So-called tints are but the effect of light and shade upon the blending of primary colors. A green leaf is composed, not of one dead color, but of a hundred varying tints. The greatest painters use the fewest colors. If for convenience we have one or two colors that are mixtures, we must know and understand them. We can study the combinations of the few primary colors, how they mix and blend, but we cannot possibly understand the mixtures of mixtures, and it requires but the slightest knowledge of colors to see that these latter can not result in a clear transparency. The wretchedest confusion of mind comes from the dealer's warning that a color based on gold must not be mixed with one based on iron, and from the dictum of the artist that only pure colors will mix, when we do not know which colors in the collection are pure. Under such conditions how is art possible? A simple illustration will show the revolution wrought by X Rays colors, which may boldly claim to have raised china painting from an industrial pursuit, and the employment of the dilettante to the dignity of full sisterhood in the fine arts.

Painting Purple Drapery.

With the old paints, the choice is between at least a dozen purples. We make our selection of the particular purple, and put in the grays as directed. The first difficulty encountered is that we can not work them as we please. Where we wish the color to be heavy we can not get it smooth. It will be tacky, get blurred, and the patience will be severely taxed. An amateur rejoices when at last he has succeeded in making some of the paint stick, and if this is half way smooth. The trouble caused by the laying on of the color completely distracts the attention from the drawing, and results in a loss of all form. The subject comes from the kiln pale, so more of the same color is put on and the subject is fired again, the same process continuing till the desired depth of color is attained. The result is indeed purple drapery: but hard flat purple without any of the tints that nature delights to vary in, here a yellowish light, there a greenish half-tone where the shadow is a reflected light. We had not dared to put in these different tones, because knowing nothing of the composition and nature of the particular purple used, a green or yellowish color put with it might produce some muddy gray.

In contrast, how easily is the following method with X Rays colors understood:

We have ten (10) colors that we have learned to understand. A careful perusal of the chapter, where the values of each of the ten colors is described, will show how to handle the two purples to obtain different degrees of strength, depth and brilliancy.

X RAYS COLORS.—CONTINUED.

We lay on the pure elementary colors in masses in the order and place in which they are seen in nature or on our study. They are laid on heavily where we wish them dark, lightly where delicacy is required. Then we blend the whole without any difficulty, as we would with oil colors, and the subject is ready for the firing. These primary colors are after the first firing in a crude yet clear state, that can be improved upon, as opposed to other china colors which generally look finished in tone before they are strong and deep enough. A crude yet clear color can be heightened or darkened and will retain transparency, while a finished tone will lose transparency when more color is laid upon it.

For the second firing we heighten, tone down, strengthen or deepen where we think necessary, to imitate nature or reproduce our study.

The colors admit of perfect blending, and therefore it is astonishing how quickly and easily the artist is able to get in a great variation and transparent coloring. The teacher is needed where the worker lacks judgment and when he must be taught to see right.



* * *The Outfit.* * *

Palette, . . .	}	Preparing Colors
Brushes, and other		Ready for use, and
Accessories. . .		Setting the Palette.

The outfit of the china painter working with X Rays colors consists of a China-Palette or Box-Palette, Knife, Bottle of X Rays Medium, Brushes and Ten Jars of X Rays Colors: Canary Yellow, Yellow Ochre, Blood Red, Finishing Brown, Black No. 1, Carmine No. 1, Carmine Purple, Purple, Turquoise Green and Turquoise Blue. For ordinary china painting this outfit will answer. (The use of other prepared colors, powder colors, enamels, paste, grounding oil, etc. is explained later.)

An almost universal source of complaint among china painters is the distracting variety of shades and tints of each color, that the old makes of paints compel the artist to buy and keep on hand, and yet they do not see how, with so limited a palette as the X Rays colors, all results can be achieved.

As the X Rays colors are all homogeneous, made from the same base, each color will blend with all the others, so that any and every shade and tint can be produced. In short, treat these colors exactly the same as you would oil or water colors.

THE OUTFIT.—CONTINUED.

It is a grievous error that students of china painting are not taught to think while painting, and yet it is an impossibility for an amateur to think when the outfit before him contains eighteen kinds of green alone, with almost the same number of reds, and a legion of other colors and tints. It is impossible to steer through these innumerable tints, tones and shades without particular direction for each. These directions are blindly followed and a promised result expected. As for instance, put on apple-green for a leaf, shade with chrome-green, then put in the veins with some other green. All this is on the same principle that young ladies learn needle work: Four stitches of yellow-green, five of bright red, etc., ad nauseam, and by exact counting and copying, the pattern is bound to come out all right. But while the work is going on there is not the slightest artistic notion of what is being done, no color sense, no taste developed or displayed.

It is such method, or rather want of method, that causes wearisome sameness in china decorating, the chief difference in merit of the work being the varying degrees of excellence of the drawing in the design.

Why not use one's judgment and individuality, however simple the subject may be. We are aware that many who undertake the decoration of china, have not had the advantage of a preparatory art course, and can therefore have but little judgment of colors. The first requisite is a study of the nature and property of colors. Based upon that, every time colors are handled, it matters not how unpretentious the subject, there should be a distinct effort at cultivating the judgment and de-

THE OUTFIT.—CONTINUED.

veloping the taste. With some instruction color can be used freely, and one's own mind direct the effort after some experience, making one's colors, for example: We wish to copy a study of a green leaf, a warm brown-green. Now we have on our palette a bluish green. Green and yellow make a bright yellow-green. The study shows the light green in the leaf more subdued, carmine is a transparent contrary to green, by adding which to yellow and green it does not darken nor make the tone muddy, but simply tones down the intense greenness. For shadows we find that finishing brown and green give a dark green. However, this is too cold a green for our purpose, so we add ochre, which makes it a moss-green.

After firing should we find our rose leaf too gray, all that is necessary is to brighten it by laying over a pure green, or yellow and green. If on the other hand we find that the leaf had fired too intense a green, we tone it down by washing over a thin black, or carmine, or ochre, or any other color we think will in combination with the color already fired in, reproduce the color of the study. It is surprising with what interest china painting becomes invested, and what possibilities colors are found to possess when this is understood, and how quickly the learner advances, and how soon the eye is trained to solve the most difficult color scheme.

The Palette.

The palette, indispensable with X Rays colors, is a white china box, consisting of a lid and a tile into which small demi-spherical recesses are sunk to hold the col-

THE OUTFIT.—CONTINUED.

ors. The lid serves two purposes, as a cover to keep the prepared colors fresh and free from dust, and as a palette for mixing paints.

A most convenient way to arrange the colors in the palette is in the following order: First row, canary-yellow, yellow-ochre, blood-red, finishing brown and black; second row, carmine, carmine-purple, purple; third row, turquoise-blue and turquoise-green.

Preparing the Colors ready for use.

Take a quantity of color from each jar with the palette-knife and mix on the palette-cover with X Rays Medium, using about one-fourth oil to three-fourths color. Then fill in the receptacles of the palette. It is not well to use too much of the Medium as the colors will become too oily, thus not working smoothly. Some of the colors may be used just as they come from the jars, while others will need a little softening. These colors, when ready for use, should be of the consistency of good fresh, soft oil colors. When the brush is dipped into it, if the color is soft and short (it ought to heap and not run) it is all right, but if it pulls stringy after the correct amount of oil was added, mix with it a drop of turpentine. It is false economy to mix only small quantities of color, as the color cannot keep fresh as well, and further it cannot be so freely used, as is the idea with these paints. A palette arranged according to above directions will keep fresh and soft for several weeks, and thus the colors are always ready for use without any "working up". If the palette has not been

THE OUTFIT.—CONTINUED.

used for some time and the colors have become stiff, they should be softened with turpentine only. No more Medium should be used, as the colors will become oily and not work freely. It is highly important that palette and brushes be kept in good order. With the tools in bad shape creditable work cannot be done.

The Brushes.

Those best adapted to these colors are the flat Russian Sable X Rays brushes and the Red Sable oil brushes. Of the Russian Sable, No. 4 flat, is used for blending, also for laying in color over a large space. No. 3, 2, and 1 are used for smaller work. Red Sable brush, flat, No. 8 is used for touching up the forms where the short broad brush would be clumsy.

Red Sable, round, No. 7 is used for outlining finishing touches or to accentuate the drawing. Fitch stippler, deerfoot shape, No. 6 or No. 8 is of assistance in smoothening heavily laid-in back grounds.

Another accessory is a steel color eraser, in place of which a common pen-knife may be used. Crisp high lights or hard lines may be scraped out with these from a painting that has been dried. A serviceable erasing-pin can be made from a sewing needle, fastened with thread into an old brush handle that has been slightly split.



* * General Remarks * *

ABOUT MIXING COLORS.

Table of Colors
and their
Description.

CANARY-YELLOW.
YELLOW-OCHRE.
BLOOD-RED.
FINISHING BROWN.
BLACK No. 1.
CARMINE.
CARMINE-PURPLE.
PURPLE.
TURQUOISE-GREEN.
TURQUOISE-BLUE.

According to quantity of each color used in mixing two or more colors, one or the other will dominate, and equal parts of contrary colors, as green and purple, neutralize each other, those mentioned producing a cold gray. The exact quantity of different colors to be combined to produce a certain tint cannot be given. With some little experience judgment can be easily attained. Colors applied in thin washes will insure delicacy; any pure color laid on heavily will fire extremely brilliant. Colors are generally darkened with black No. 1, and finishing brown, when they yield a dark but subdued shading color that is indispensable. If a chosen color has been deepened with finishing brown and has not turned out brilliant enough to suit our design, we carry the chosen color bright and unsubdued, graduated to

MIXING COLORS.—CONTINUED.

meet the requirements, upon this dark undertone and give it another fire. After firing, this dark undertone will shine through the bright color laid over and render it deep, but does not lessen its lustre.

Should the amateur by mistake have used too much of one or the other color, in trying to produce a certain tint, and this color after firing stand out vividly, there is no need for worry or to deem it spoiled, all he has to do is to lay on a pure contrary color till it is deadened. In this way a shade that has been too purple in the first fire can be turned into an ochre, red or other desirable tint. There is no danger of failure as any tint procured by the artist, if it be clear, can be counter-balanced, enriched or softened by another color. With the following suggestions about the table of color great effects can be obtained with skillful handling. Whatever is true of mixing one color with another, can be said of laying over one color with another, and the result will be the same. Two or more colors used in combination to give a certain tint, will also give this tint if each of the colors be laid in pure and successively after as many firings.

The colors are then qualified in applications, that is, a thin wash is given of one and a heavier one of the other, according to the tint to be secured. Great variation of color is achieved as much by mixing different tints on the palette as by successive washing and blending in of different colors. This latter is called glazing in oil painting. A second color is laid over the first color for the purpose of strengthening, reducing, or neutralizing its lustre.

MIXING COLORS.—CONTINUED.

X Rays colors admit of being laid in very heavily and can therefore be said to be also opaque.

In the old china colors, when one color was laid over another, the amateur was seldom successful in obtaining clear transparent effects. The result of much exertion in this direction generally was a muddy woolly appearance. The cause rested in the impure color used and in the color being difficult to blend in smoothly. These evils are remedied by the new colors, which are pure and rich in quality and easily handled, the result being unequaled in clearness and transparency.

Things requiring only one fire will not be wanting of extreme brilliancy in purely decorative work.

Bright and pleasing effects are obtained with one fire, but brilliancy and depth should not be aspired to in one or two firings. When great glow and depth of color is needed we also want great variation of color, and variation is produced by glazing.

In the following table of colors valuable suggestions about mixing colors to produce varied tints are given. After some experimenting a clever hand can obtain truly striking results.

Canary-Yellow. * * *

When used in a thin wash canary-yellow will give an ivory shade; if used thicker a very brilliant tone. Yellow and ochre give an orange color; yellow, ochre and blood-red yield a very deep orange; yellow-ochre, blood-red and finishing brown, a deep yellow-brown. Yellow in X Rays colors is almost a substitute for

MIXING COLORS.—CONTINUED.

white as in oil paints. It heightens the lights upon any dark drapery that has become too dark.

With yellow and a speck of green we can heighten the lights of leaves or bring out little blades of grass that have not been scraped or left out.

Mix the local tone of flesh color of yellow, a little blood-red and less carmine-purple. The local tone of white flowers or white draperies receives beautiful softness and warmth by a thin wash of yellow and carmine-purple (using less of the carmine-purple). Yellow and carmine give a desirable shade in a pink-rose. Yellow that has been fired too bright is subdued by a thin wash of carmine or carmine-purple. Yellow is indispensable in combination with green or blue, and will furnish a number of bright greens.

Yellow-Ochre. * * *

Ochre is a strong color, and when used by itself, that is if an ochre color tint is required, should be broken with one of the other colors.

In general, ochre should be used in very small quantities with other pure color, to break the latter, that is to lessen the intensity, as for instance, a little ochre with purple will take away the obtrusiveness of the purple color.

Carmine-purple and green in equal parts give gray used in flesh tints, and should be broken with a little ochre. Ochre mixed with green or blue in different quantities will give various shades or warm green.

MIXING COLORS.—CONTINUED.

Ochre may be mixed with any dark shade that is to be laid on heavily. In such composition it will lend an indescribable mellow hue to the tone. Ochre is also used to indicate reflection in painting flesh or any other object to express rotundity.

Blood-Red. * * *

Blood-red is chiefly a flesh color.

A little blood-red and less carmine-purple added to canary-yellow gives the local flesh tone. The warm half-tones in flesh, such as are about the eyes, cheeks, lips, nostrils, knuckles, etc., are indicated with blood-red and a little carmine-purple.

A little blood-red added to carmine will give the latter body. Blood-red, carmine, and carmine-purple (in about equal parts) are happily combined to produce a rich geranium color.

Blood-red can be said to be opaque when used heavily. Laid over a dark undertone it will stand or cover this entirely in the manner of oil paints. The scale of reds obtained in mixing blood-red with yellow, yellow-ochre, finishing brown, black No. 1, carmine, carmine-purple and purple is quite equal to any decoration required. In painting purple drapery it contributes much to the rich effect.

Finishing Brown. * * *

Finishing brown is a mixture of different colors, and is convenient to have ready for use. The use of finishing brown is explained by its name. On a portrait the fin-

MIXING COLORS.—CONTINUED.

ishing touches are put in with it. The drawing of eyes, nose and lips is strengthened with finishing brown.

The small forms of hair are worked out with it. It is also used to deepen or darken any of the other colors. When any color has been rendered dark enough with finishing brown, it is sometimes not brilliant enough. A wash of the pure color, with which the finishing brown was used, should then be given.

When used heavily, finishing brown is opaque. It should not be used by itself as a thin wash for a local tint. When painting flesh or other subjects which are quite finished in tone, but have places that need patching and the drawing demands accentuating, this is done with finishing brown.

Black No. 1. * * *

Black is a very important color. When used heavily it is quite opaque. Some black No. 1, mixed with turquoise-green, gives very recommendable dark green.

A cold gray is made from black and blue. As a glazing color black renders excellent service.

As in oil colors every pure color should be modified by a different color: for example, flesh tones as first united are too intense, hence it is necessary to lay over them a very thin black wash when they become life-like. This wash is applied for the last firing.

Thus can beautiful atmospheric effects be achieved. Without such modification colors are flat and dead. An intense deep and brilliant black is supplied by adding a little purple to black.

Carmine No. 1. * * *

Carmine is chiefly used in painting flowers. It can be laid on heavily or thin, depending upon the brilliancy and delicacy striven for.

Carmine mixed with canary-yellow and turquoise-green or green alone, yields a very soft gray for leaves and flowers. Too glaring yellow-green is reduced by a thin wash of carmine. Very happy results are obtained from carmine No. 1, black No. 1 combined, to give a final glaze to the shadow side of pink roses.

Purple. * * *

Purple is a strong color. Blue or blood-red or ochre or carmine will give purple a flush, according to the kind of purple aimed at. Blue will make bluish-purple and ochre, golden purple, etc. Very dark purple is obtained by mixing purple, finishing brown and a little black. Very rich purple is made by washing over this dark purple, with pure purple or purple mixed with blue or blood-red, etc., according to the particular tone the purple is wanted to incline. Blood-red, turquoise-blue and purple will furnish a tone corresponding to the color known as deep violet of gold.

A little purple added to black No. 1 will give intense richness to the latter.

Turquoise-Blue. * * *

Turquoise-blue and turquoise-green are the only colors that are cold. Turquoise-blue is put to the same use as cobalt-blue is in oil or water colors. The atmosphere between eye and object or the interspace that re-

MIXING COLORS.—CONTINUED.

lieves one object from another is best expressed by blue. In every background we should use some blue or green. It is a matter of individual perception or artistic independence to decide to use turquoise-blue or turquoise-green in reproducing atmospheric effects.

We obtain the various tints of violet shades in mixing blue with carmine and purple.

Turquoise-Green. * * *

Turquoise-green is a strong color. It does not change materially in firing when used pure or intermixed with other colors. In different combinations with any of the other colors it furnishes the entire scale of greens as seen in nature.

Green and purple gives a gray, much used in painting landscapes to indicate distances, and to bring forth atmospheric tones. Turquoise-green mixed with canary-yellow gives a yellow or apple-green; turquoise-green and yellow-ochre provides olive-green; turquoise-green, canary-yellow and blue supply moss-green; turquoise-green and carmine-purple a cold gray; turquoise-green, purple and black No. 1, or turquoise-green, yellow-ochre and black No. 1, or turquoise-green and finishing brown, each of these combinations yield a shading green.

Turquoise-green, turquoise-blue and black No. 1 equal a dark green.



★ ★ Drawing. ★ ★

IMPRESSION PAPER,
TRACING,
OUTLINING,
PAINTING,
DRAWING and TRACING.

Application of Color,
Blending,
Light, Half-tones, Shadows.
Reflections,
Transmitted Light,
Effects.

It is absolutely necessary for the amateur to trace the subject to be painted on the china. Drawing figures free-hand on china is impracticable, as wavering outlines and other obscure lines are unavoidable, and would unnecessarily deface the china. We should have the china clean and clear, and the subject delineated in delicate but distinct outlines, and a few prominent points indicated, that lend assistance in painting. If the subject to be painted is an original design, draw this on paper and trace from it. The artist will find the X Rays colors excellent material for sketching without previous designing.

Impression Paper.

For an impression it is necessary to lay transfer paper between the tracing or drawing and the china. The china should be rubbed off with turpentine or medium, in order to give tooth to the impression.

The only serviceable transfer paper is made by scratching with a knife a bit of lead from a pencil and

DRAWING.—CONTINUED.

rubbing it with the finger on a thin piece of writing paper. Make a trial on the china with this paper by using a few strokes to see if the impression be of a light yet distinct gray. Should the paper impress a black line or otherwise soil the china, wipe off some of the superfluous lead with a cloth. Try again and if it works well you have an impression paper for further use. The tracing is glued on the china with mucilage in one or two places to prevent its moving. The transfer paper is laid underneath the tracing, and the lines of the latter are carefully followed, with hard sharp pointed lead or slate pencil. It is advisable to outline the drawing on the china with the blood-red of the china paints. When the subject is laid in, these lines will not entirely wash out; enough will retain to assist in the painting.

In laying-in, these lines can be softened and taken in; or, if this was neglected, they can be scratched out after the painting has dried. To outline with water colors or India ink cannot be approved. It ought to be done very accurately in pale uniform lines, as these lines, being fixed and immovable, are very annoying in the subsequent painting, and deceiving if they do not correctly mark the drawing. Some china painters delineate in some discretionary china color and fire this in; however, this is a risky thing for an amateur to do.

Application of Color.

The color should be laid in with as large a brush as possible. The amateur should from the start correct the bad habit of using small brushes. Look upon your

DRAWING.—CONTINUED.

subject as a mass of light and shade, ignoring all detail. Load the brush well, and lay the color on boldly. Begin by giving the subject a local tint; then put in half-tones and shadows, reflected lights, etc. over the local tint. We may also begin same as with oil paints, by blocking in heavily shadow, half-tone and the light (a thin tint for light). Paint flat and in masses.

X Rays colors will remain open and retain their blending power. The artist can paint with perfect ease, as there is no reason to hurry on account of the paints drying.

If the local tint be desired light, use less color and enough oil to spread the small quantity evenly over the desired space. The heavier the color is applied, the less oil must be used, too much oil will make the color run, and thus liable to collect dust and work disagreeably. If you are using color sparingly with more oil, make a few strokes in a clean place on the palette with your brush, which will in this manner deposit unnecessary oil and regulate it.

Blending. 

After the color has been laid on crudely in blocks, take your largest brush, first having cleaned it in turpentine and made it pliable with medium, and blend all together, going gently over the whole painting from right to left, and from the light to the shadows.

In blending care must be taken to have the blending brush in perfect condition. It is a common fault of amateurs, that after cleaning the brush in turpentine they dip only the point of the brush in the medium.

DRAWING.—CONTINUED.

The turpentine still adhering to the top of the brush makes it unfit for the purpose. Steep the brush well into the oil, and then wipe it gently with the paint-rag. The brush so treated will be damp and pliable, and yielding to the hand, and give perfect satisfaction.

Where larger spaces are to be blended, a stippling brush lends good assistance. The use of the pad is objectionable, except for decorative tints, etc.

A pad used on a figure will absolutely destroy all forms.

Light, Half-Tones and Shadows.

Every object in nature consists of light, half-tone and shadow. If the light be warm, the shadows are warm, and the half-tone between light and shadow is cold. Light and shadows cold, the half-tone will be warm. In nature two warm tones are interposed by a cold half-tone, and vice versa.

Reflected Light.

Rotundity is expressed by a reflected light that extends on the uttermost edge of the part of the subject that is in the shadow.

Effects.

Bits of bright light from one object are sometimes reflected on another. Painting these apparently stray colors, make a painting extremely bright and interesting. Putting a pink touch apparently unqualified on a white-rose, illustrates the point.

Transmitted Light.

Transmitted light is light shining through transparent objects, such as grapes. It is of a very bright and brilliant hue.

How to Paint Figures. * * *

The background may be painted first, the figure next, beginning with the hair, or the background may be put in after the figure has had one fire. Generally, if the background is painted first, this is dried before the figure is begun. This is not essential. With these colors an artist will be able to work the whole picture together. In this way the hair and drapery can be beautifully blended into the background, and no hard lines result. If the background is heavy and to be dried, and the figure laid in afterwards, hard lines are sometimes unavoidable. For the subsequent firing, hair, drapery and background should be painted together, and the hard outlines will gradually disappear.

Painting Flesh.

FIRST FIRE.—The local tint of flesh is mixed from canary-yellow, blood-red and a little carmine-purple. Take with the brush some canary-yellow and place on the palette (mix tints with the brush and not with the palette-knife), and mix some blood-red with it to make the desired flesh tint, then add a little carmine-purple. Thin this with X Rays medium. Give the whole flesh an even wash of this tint. Care must be taken as to

PAINTING FLESH.—CONTINUED.

the amount of oil used. Much depends upon this. The color must flow freely and evenly from the brush, the tint laid on must be damp, to admit any amount of blending, yet it must not be wet and run, and collect dust. The warm half-tone is laid in next. It is mixed from blood-red and a little carmine-purple. The warm half-tone is used to indicate the red around the cheek-bones, eyes, lips, nostrils and about the chin. The reflected light is put in next, and extends on the edge of that part of the subject which is in the shadow. There is also reflection under the chin, nostrils and eyebrows. The cool half-tint unites the warm local tint or light with the warm deep shadows. The cool half-tone is to be composed of carmine-purple and turquoise-green (equal parts) and some ochre added. The roots of the hair on the forehead can be indicated by the warm or cold half-tone. The deep shadows are the same as the cold half-tone, with more ochre and some blood-red, and a little black added. After the local tint, half-tones and deep shadows, etc. are laid in boldly, the whole is blended with your broadest brush. Pass the brush gently over the whole, blend from light to shadow and from left to right. After the subject is blended any amount of work can still be put in, as it will remain open for several hours and admit the blending in of different colors, and forms may be modeled out very far. The high lights should be washed out with a clean brush (made pliable with oil). After blending, and before the subject has dried, the eyes and eyebrows should be put in, and the drawing in general, eye-lids, nostrils, etc., be strengthened. After drying, the high light on the nose and in the eye can be scratched out. Where

PAINTING FLESH.—CONTINUED.

the high light is required broad and soft, as on the forehead and cheek-bone, this is better done with the brush before drying. After the hair and drapery have been laid in likewise, the subject should be slightly dried over heat. The hair can be painted first, and while still moist the flesh tints of the face be blended in.

The drawing is perfected by working over the dried color. With an understanding of the technique of water colors, the artist can work indefinitely on a picture after it has been dried. Broad washes can be laid on, but if the person be inexperienced, he had better have it fired first. Different complexions require their dominating color to be used more freely. The shadows and half-tones of children are more delicate gray. Cupids are very rosy and require more blood-red and carmine-purple.

Before firing look your subject over well that the lights are well defined, and that there are no mistakes in the drawing.

SECOND FIRE.—The work for the second fire is to apply color that will give brilliancy and depth to the shadow, and relief to the lights. Background and drapery may be made first, and we can see better what strength of color the flesh parts need. Suit your proportion of different colors to the tints already fired in; as in the flesh color: Should this be inclining to yellow in the first fire, use prevalently blood-red and carmine-purple for the second fire. Above all, see that your colors acquire power. Maintain a strong distinction between light and shade, and keep in mind that a warm tone is relieved by a cold one.

PAINTING FLESH.—CONTINUED.

THIRD FIRE.—Our picture after the second fire should be strong enough in color and require only finishing touches. Certain tones are refined, and mellow and atmospheric effects obtained, by a thin wash of color. The drawing is accentuated with finishing brown. Finishing touches should not be attempted before our figure has body and detaches itself from the background; that is, it must have strength in light and shade, and stand out pre-eminently. If the amateur is not sufficiently skilled in the free application of color, to succeed in obtaining powerful coloring in two fires, the work of the second fire should be repeated until this is gained, and the work as given here for the third time, that is finishing touches, must be reserved for the last fire.

Firing China. 

Judging from common experience there are but few amateur kilns that come up to expectation. We will herewith try to give a few hints to improve a kiln.

Muffles made of iron are not commendable as they are injurious upon the flux of the colors. Gases originate in the pores of the iron when it becomes hot and precipitate upon the mineral paints. To prevent the iron directly affecting the china, we give the inside of the muffle a coating of brick. Two tablespoonfuls of borax are dissolved in enough water to thin two pounds of **common yellow clay** to the consistence of thick cream. This paste is spread with a brush about the inside of the muffle. Before firing any china this coating is dried and given red heat. **We then have a muffle lined with brick.**

FIRING CHINA.—CONTINUED.

All kilns should be provided on the outside with an evaporating funnel. A short funnel can easily be made longer of sheet iron by any tinner.

Charcoal, gas, oil or other combustible used to fire, will develop gases that penetrate the smallest cracks, and in this way injure the colors.

We should therefore see that all cracks are well closed, and use for this purpose the before mentioned paste. We have heard of such nonsense as white-washing the inside of a kiln. It is truly surprising how any one could be advised so foolishly. Salt or the smallest particle of candle mean certain death to the glaze.

In speaking of amateur kilns it is important to observe, that pieces decorated with bright gold or lustre are not to be fired together with careful work that want several fires. Very fine pieces of work in figures, portraits or flowers should be well dried before firing, allowing every bit of oil to evaporate from the china. Any combustible matter (in the latter case oil) will develop gases that must be allowed to escape, as otherwise in the closed kiln will precipitate on the china and destroy the glaze. Colors laid on in thin washes will be most injuriously affected by strange matter.

If treated properly all colors, no matter if they be applied heavily or thinly, should become high glaze.

X Rays require a less degree of heat than other china colors. The first fire should be strong, to insure glaze and perfect blending of the colors. If colors burn out too much they have been fired too strong. All successive fires should be gradually diminished.

FIRING CHINA.—CONTINUED.

Simply stacking a kiln and giving a certain amount of heat is not firing. Firing wants to be studied. Every kiln wants different handling and has its peculiarities. The following incident gives evidence of the ignorance current among amateurs relating to firing: A lady sent a plate, decorated with roses painted with carmine, to be fired. With it she gave impressive instruction, “to put the plate in a cool place in the kiln.” (A kiln is not constructed on the same principles as an ice-chest.)

Another lady had used delft-blue in powder on a plate. This had become a high glaze in the first two firings, but the third time had come rough from the kiln, though no more color had been put on the delft-blue, but only the flower decoration had been touched up. She told her woes, insisting between each sentence over and over again, she had used X Rays colors.

Anybody should, in this case, immediately have been convinced that the fault lay entirely with careless firing. Colors that fire with glaze the first time cannot possibly lose this in successive fires, whether more color or not was put on.

White Roses. 

After the roses have been outlined, wash over the whole a thin local tint mixed of canary yellow and carmine No. 1. The half-tone is put in next with a gray made of canary-yellow, carmine No. 1 and turquoise-blue. The reflections are indicated with yellow. Also paint the centre with touches of canary-yellow. The deep shadows are given the same half-tone, but increasing the proportion of carmine. The half-tones, reflec-

WHITE ROSES.—CONTINUED.

tions and shadows should be laid in place boldly without any aim at details. The colors so blocked in are then blended together with the largest brush. After blending, when still moist, wash out the high lights entirely on the turned over edges of each roseleaf with a clean brush dampened with medium. Each single feature may be shaped out more carefully now by touches of deep color, or we may fire it and put in details in the second firing.

In painting the leaves more accurately be careful to keep the edges soft, avoid hard lines but indicate what you seek in touches of clear color.

Let each of these touches be well reflected that effects may be produced in a distinct and meaning manner. For the second fire we glaze over with any color that will throw out a color or retire it, warm it or cool it as we deem fit.

Crisp lights may be scratched out with a knife after the subject has been dried a little over heat.

The green leaves of a white rose are a pale grayish-green. Take for the local tint turquoise-blue, canary-yellow and carmine No. 1, and shade with turquoise-green and black No. 1. The lights can be left out and washed over thinly with pure turquoise-blue for the second fire.

Yellow Roses.

Local tint, canary-yellow. For a greenish half-tone take canary-yellow, turquoise-green and carmine, or if preferred a warm half-tone mixed with yellow-ochre,

YELLOW ROSES.—CONTINUED.

carmine and blood-red. Reflections, a very pale tint mixed of canary-yellow and turquoise-blue. Deep shadows, carmine-purple and yellow-ochre. The crisp high lights must be washed or scratched out. A yellow rose has sometimes red touches upon some of the leaves, these are painted with blood-red or carmine-purple or both.

The green leaves of a yellow rose are yellow-green. The local tint, yellow and turquoise-green, is shaded with finishing brown, turquoise-green and yellow-ochre.

Pink Roses.

A good plan to paint a pink rose is to lay in half-shadows and deep shadows with pure carmine No. 1, graduating the tint. Leave broad lights entirely white china and use the carmine a little heavier to make the shadows and centre. Put in the reflections with canary-yellow and a little ochre.

For the second fire, we glaze the lights with carmine No. 1, and put the gray half-tones of turquoise-green, carmine-purple and a little ochre. The deep shadows are marked with blood-red and carmine-purple.

If a third fire is to be given, a good effect is obtained by glazing over the entire shadow-side of the rose with black No. 1 and carmine No. 1.

The green leaves of a pink rose are moss-green. Local tint, canary-yellow, yellow-ochre and turquoise-green, shaded with turquoise-green, yellow-ochre and black No. 1. The lights may be washed out, and at the second painting be washed over with thin canary-yellow.

Dark-Red Roses.

We cannot succeed in representing the intense brilliant red seen in dark-red roses by loading an amount of red all over the flower, but we must carefully observe all intermediate tints, allow prominent high lights and very deep shadows.

To depict the variation of color we glaze in different colors at the second painting. When painting with purple use it rather heavy. This color must be used in this case in its full strength to have power. Purple must be carefully blended. To gain an even tint is important.

DARK-RED ROSES having bluish or purplish lights.—

Local tint is put in with purple. Half-tones are put in with purple and blood-red; reflections, canary-yellow; deep shadows, finishing brown and purple. High lights are washed out.

For second fire, wash the lights with carmine No. 1, and deepen the shadows with blood-red and purple, blending into the deep shadow color some ochre will imitate the velvety texture of dark-red roses. Into the dark centre glaze a little black No. 1.

DARK-RED ROSES having warm red lights.—Local tint, carmine-purple; half-shadows, blood-red; reflection, turquoise-blue or green. Deep shadows, finishing brown and carmine-purple. Take out the lights.

Second painting, wash over the whole with blood-red and strengthen the drawing with blood-red and black No. 1. Green leaves of purple roses are purplish green. Local tint, turquoise-green, canary-yellow and carmine-purple, shaded with turquoise-green, carmine-purple and finishing brown.

Violets.

For light violets use turquoise-blue and carmine, increasing the quantity of one or the other for bluish or pinkish violets. Shade with turquoise-blue, purple and a little ochre.

Dark Violets.

Turquoise-blue and carmine-purple, shaded with finishing brown, turquoise-blue and purple. Violets away back and indistinct give relief to those that are bright and near, and are indicated with a gray tone.

Carmine-Purple.

Carmine-purple is a mixture of carmine and purple. Carmine being for certain purposes too light in color, and purple too deep. The artist is able to mix this tint himself. However, it is more convenient and perhaps safer to have this tint ready and reliable on the palette.

A little carmine-purple added to blood-red gives the red half-tones seen in flesh. Carmine-purple and yellow-ochre washed over green will change green into warm gray. With carmine-purple and green atmospheric effects are attained.

Carmine-purple with turquoise-blue added is a valuable tone much used for violets.



* * **D**raperies. *

* * **W**hite Drapery. *

Local tint warm, very thin wash of canary-yellow and carmine-purple. Half-tone delicate cold gray mixed from carmine-purple, turquoise-green and a little ochre. Shadows warm, same as half-tone with black No. 1 and more ochre added. Reflections warm and delicate, canary-yellow, yellow-ochre and carmine-purple.

* * **Y**ellow Drapery. *

Local tint warm, a thinner or heavier wash of canary-yellow, according to the delicacy or brilliancy required. Half-tone cold, turquoise-blue and black No. 1. Shadow warm, blood-red, carmine-purple and ochre. Reflection, cold delicate gray, turquoise-green and carmine-purple.

* * **R**ed Drapery. *

Local tint warm, blood-red and carmine-purple, equal parts. Half-tone cold, turquoise-green and carmine-purple. Shadows warm, blood-red, purple and black No. 1. Reflection, yellow-ochre.

Black Drapery. * * *

Local tint cold, black No. 1 and turquoise-blue. Half-shadow warm, carmine-purple, yellow-ochre and black No. 1. Shadow cold, black No. 1, turquoise-green and purple. Reflection, yellow-ochre.

Blue Drapery. * * *

Light cold, blue. Half-tone warm, orange. Shadow cold, turquoise-blue, black No. 1 and a little purple. Reflection, carmine-purple and turquoise-green.

Green Drapery. * * *

Light, turquoise-green. Half-tone, blood-red, carmine-purple and turquoise-green. Shadow, turquoise-green and black No. 1. Reflection, canary-yellow and a little carmine No. 1.

Pink Drapery. * * *

Light, carmine No. 1. Half-shadows, turquoise-green and carmine-purple. Shadows, carmine-purple, yellow-ochre and blood-red. Reflection, canary-yellow.

Purple Drapery. * * *

Light, carmine-purple. Half-shadows, turquoise-blue. Shadows, purple, blood-red and finishing brown. Reflection, canary-yellow.

~~~~~ Hair. ~~~~

Light Blond Hair. * * *

Cold local tint, canary-yellow, a little carmine-purple and turquoise-green. Half-shadow, warm yellow-ochre and a little carmine-purple. Shadows cold, carmine-purple, turquoise-green and yellow-ochre.

Red Blond Hair. * * *

Local tint warm, yellow-ochre and blood-red. Half-tints cold, turquoise-blue, carmine-purple and yellow-ochre. Shadows warm, carmine-purple, yellow-ochre, blood-red and black No. 1.

Brown Blond Hair. * * *

Local tint warm, yellow-ochre broken with a little carmine-purple. Half-tint cold, turquoise-blue, black No. 1 and a little carmine-purple. Shadows warm, yellow-ochre, blood-red and black No. 1.

White Hair. * * *

Local tint warm, canary-yellow and carmine-purple. Half-shadow cold, turquoise-blue and black No. 1.— Shadows warm, turquoise-green, carmine-purple, yellow-ochre and black No. 1. Broad high lights must be washed out.

Black Hair. * * *

There are two kinds of black hair; the blue-black, which is peculiar to the Latin races, and the warm black, which we find among the mixed races.

The first black hair has bluish lights, warm half-tone and cold shadows. The other black hair has warm lights and shadows.

BLUE-BLACK HAIR.—The local tint is mixed from turquoise-blue and a little black No. 1. The half-shadows, black No. 1, purple and yellow-ochre. The deep shadows, black No. 1, turquoise-green and purple.

BLACK HAIR.—The local tint is mixed from carmine-purple and turquoise-green, warmed with yellow-ochre. Cold half-shadows, black No. 1, one-half as much purple and ochre. Warm shadows, black No. 1 and blood-red.

In painting any color of hair apply the paint generously. Paint in masses of light and shade, same as anything else. After blending, wash out some of the high lights to mark the forms of the hair. The detailed forms of hair are put in for the last firing, with finishing brown for every color of hair except black. For this latter use black No. 1 and finishing brown.



Painting Monochromes.

MONOCHROMES are always pleasing. The work is simple and gratifying. Monochromes in delft-blue, sepia and red-brown are in great favor.

Delft-blue and red-brown are two colors not included with the palette of ten colors for ordinary work. Sepia is a mixture of yellow-ochre, canary-yellow, turquoise-blue, turquoise-green, carmine-purple and enough black No. 1 added to darken it to suit individual taste.

Sepia of X Rays colors can also be bought ready mixed.

The color in a Monochrome is laid in the same as painting flesh, but that the work is all done with one color.

The local tint, half-tone and shadow are represented by graduation of one color. Small finishing touches are put in after having dried the subject a little over heat. To paint on dried color, we take oil into the brush and very little paint, then on a clean place on the palette we make a few strokes and turns with the brush.

This will expel the superfluous oil from the brush, and enough color and oil remain to give a soft mark that will unite with the dried color on the china, but not run over it or disturb the undertone.



X Rays Grounding Oil.

X RAYS GROUNDING OIL possesses the quality to retain moist longer than any other grounding oil as yet on the market. The oil is thinned with a little turpentine, and then applied on the china and padded quite evenly. If we mix a little X Rays color into the grounding oil we can better distinguish to produce an even surface. The oiled china must be allowed to stand about one-half hour before the powder color is dusted on. We may graduate the tints by the length of time we allow the grounding oil to stand on the china. Therefore we obtain carmine by applying after one-half hour, then in graduations, after ten hours we attain a very delicate rose color. (Any of the X Rays colors can be had in powders also.)

Scrolls or other decoration can be drawn on the dusted surface with a pointed brush handle. This demands some skill, as a slip of the instrument or any other accident can never be rectified, and the dusting work must be done all over.

The following plan is new and will give perfect satisfaction in securing an even and sharp edge decoration in a dusted surface.

Some prepared chalk is mixed with water and a little mucilage to the consistency of ready mixed paste. The conventional design is drawn upon the china and is covered with the chalk in the manner that paste or enamel work is done. The grounding oil is spread over the whole subject, and padded and dusted with the powder as is described above. After firing, the chalk will peel off and leave the design in white china.

A marble effect can be produced by dusting different colors on the surface. Carmine, turquoise-blue, turquoise-green and canary-yellow give a pretty combination for a marble effect.

X Rays Medium.

X RAYS MEDIUM is the only oil necessary for painting and tinting. X Rays Medium will best speak for itself when used. Nobody will dispute the fact that it is unequaled by any oil used in painting and tinting with mineral colors. It has a fine flexible quality.

The common complaint is the tackiness and general unpliant nature of the oils used with mineral paints.

X Rays Medium will retain its blending properties any length of time after application. It adheres to the china, to admit blending without rubbing up.

In tinting use so much oil as to allow even spreading of the tint. The tint must appear damp but not wet. If it be wet, it will collect dust.

Paste and Relief White.

X Rays Paste and Relief White work on the same principle as the colors, they flow easily and readily from the brush. They are ready for use as they come from the jars. If they become a little too stiff, add medium, the same as you would with the colors. Relief White is made for soft and hard glaze, and hence cannot chip off. If extra high relief is wanted, put paste on first and dry this and cover with Relief White. This will be found to be especially durable.

Relief White may be given any tint by adding color to it.

* * *Directions* *

FOR MIXING } to produce certain well-known tints.
X RAYS COLORS, }

The following directions for mixing to produce certain tints are given to assist the amateur to become familiar with the colors. For the accommodation of decorators these tints are sold ready mixed. Any especial color that the flower-painter finds suitable for bright touches or effects, is made to order on application at J. Schumacher's Studio, 1820-24 Chouteau Avenue, St. Louis, Mo.

Bright-red and gold-yellow are recommendable for painting flowers. Bright-red is serviceable for depicting poppies. Used pure and in full strength it is of extreme brilliancy.

Gold-yellow takes about the same place that cadmium does in oil paints.

CHROME-GREEN.—Turquoise-blue and turquoise-green.

DARK-GREEN.—Turquoise-green, black No. 1 and a little purple.

SHADING-GREEN.—Turquoise-green, black No. 1, purple and yellow-ochre.

APPLE-GREEN.—Canary-yellow and turquoise-green.

GRASS-GREEN.—Turquoise-green, yellow-ochre and a little canary-yellow.

SEA-GREEN.—Turquoise-blue, canary-yellow and carmine No 1.

OLIVE-GREEN.—Turquoise-green and yellow-ochre.

MOSS-GREEN.—Turquoise-green, canary-yellow, turquoise-blue and a little blood-red.

EGG-YELLOW.—Canary-yellow, yellow-ochre and a little carmine-purple.

ORANGE-YELLOW.—Canary-yellow, yellow-ochre and a little blood-red.

YELLOW-BROWN.—Yellow-ochre, blood-red and finishing brown.

CARNATION-RED.—Blood-red.

SALMON.—Blood-red, canary-yellow and carmine No. 1.

MAROON.—Purple and blood-red.

GRAY FOR FLESH.—Carmine-purple, turquoise-green and yellow-ochre.

GRAY FOR FLOWERS.—Turquoise-blue, black No. 1, carmine No. 1 and canary-yellow.

WARM-GRAY.—Turquoise-blue, yellow-ochre and carmine No. 1.

COFFEE COLOR.—Yellow-ochre, blood-red, canary-yellow and carmine No. 1.

CHOCOLATE.—Yellow-ochre, carmine-purple, turquoise-blue, a little blood-red and some black No. 1.

CHESTNUT-BROWN.—Yellow-ochre, blood-red and carmine-purple.

VANDYKE-BROWN.—Yellow-ochre, blood-red, carmine-purple and black No. 1.

LIGHT-PINK VIOLET.—Turquoise-blue and carmine No. 1.

LIGHT-BLUE VIOLET.—Turquoise-blue, carmine No. 1 and finishing brown.

DARK-WARM VIOLET.—Turquoise-blue, carmine-purple and blood-red (or ochre).

DARK-BLUE VIOLET.—Turquoise-blue, purple and finishing brown.

DARK-RICH-PURPLE VIOLET.—Purple, blood-red, finishing brown and a little turquoise-blue.



A Practical Hint to Directors of Art Schools and Students of Art. . . .

The painter upon canvas or in water colors must as a rule display not only exceptional talent, but also be blessed with uncommon luck, in order that the sale of his productions provide him a means of living. Painting upon china, by using X Rays colors, enables the artist or student of art to produce work, which, while it adds to his development and reputation, at the same time has an immediate and universal market. Briefly, one may say that china-painting is the bread and butter sister of the muses. In all academies where instruction in art is given, it would seem to be highly desirable, if, in addition to developing the technical knowledge and skill in art, the results of the students' work would provide them with a livelihood.

Most of our teachers of china painting have received their art education only at European china factories. They have become very familiar with china colors and by long years of practice have acquired a knack of producing brilliant coloring and effects. This is deceiving and leads us to overlook the essentials that mark the work of the artist. These persons should be called china decorators. They are ill qualified for teaching. They lack art education and cannot give their pupils an understanding of the principles of art which would rapidly make them independent and original.

X Rays colors will permit artists to take up china painting and impress their work with their individuality. There would no longer be the tiresome similarity of all paintings on china. By looking at a piece of painted china we might, by its manner of painting, readily recognize the well known artist, the same as we do in oil painting.

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